

Study Area: **PG&E North Valley**

Thermal Overloads



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-T-1	30110 GLENN 230 31722 GLENN 60.0 2	P1-3:A3:66:_Glenn 230/60 kV Transformer No. 1	P1	N-1	101.91	105.12	104.93						Glenn 230/60 kV Transformer No. 1 Replacement Project
NYVL-T-2	31474 FRBSTNTP 115 31814 FORBSTWN 11.5 1	P1-3:A3:31:_Palermo No.2 230/115 kV Transformer	P1	N-1	100.73	<100.0	100.57						Explore potential mitigation
NYVL-T-3	31482 PALERMO 115 31516 WYANDJT2 115 2	P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P1	N-1	140.13	NConv	105.36						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-4	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P1	N-1	109.44	NConv	<100.0						Caribou Thermal SPS
NYVL-T-5	31488 GRIZ JCT 115 31512 BIG BEND 115 1	P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P1	N-1	131.80	NConv	<100.0						Caribou Thermal SPS
NYVL-T-6	31516 WYANDJT2 115 31512 BIG BEND 115 2	P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P1	N-1	140.40	NConv	105.59						Caribou Thermal SPS
NYVL-T-7	31574 ANDERSON 60.0 31604 COTTONWD 60.0 1	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<100.0	103.64	102.52						Explore potential mitigation
NYVL-T-8	31664 WESTWOOD 60.0 31668 ULTR WSD 60.0 1	P2-1:A26:204:_RICHMOND-WESTWOOD #1 60 kV	P1	N-1	<100.0	121.17	<100.0						Explore potential mitigation
NYVL-T-9	31735 CHICO JT 60.0 31738 ANITA 60.0 3	P1-3:A3:55:_Glenn No.2 230/60 kV Transformer	P1	N-1	124.65	128.56	128.51						Long Term: Anita Substation Project
NYVL-T-10	31818 PIT 1 U1 11.0 30185 PIT 1 230 1	P1-3:A3:8:_Pit 1 PH No.2 230/11 kV Transformer	P1	N-1	<100.0	<100.0	115.05						Explore potential mitigation
NYVL-T-11	31826 SOUTH G 4.16 31596 SOUTH 60.0 1	P1-2:A3:83:_Coleman-Red Bluff 60 kV Line	P1	N-1	<100.0	102.37	102.97						Explore potential mitigation
NYVL-T-12	31923 COLUSGT1 18.0 30114 DELEVN 230 1	P1-2:A3:24:_Delevan 230 kV Tie Line	P1	N-1	100.01	102.06	101.62						Explore potential mitigation
NYVL-T-13	36900 RICHMOND 60.0 31664 WESTWOOD 60.0 1	P2-1:A26:205:_MEADOWWW-WESTWOOD #1 60 kV	P1	N-1	<100.0	133.43	<100.0						Explore potential mitigation
NYVL-T-14	31474 FRBSTNTP 115 31814 FORBSTWN 11.5 1	P2-3:A3:5:_NON-BUS-TIE BREAKER CB2032 FAILURE AT PALERMO 230kV	P2	Non Bus-tie breaker	100.78	<100.0	100.60						Explore potential mitigation
NYVL-T-15	31482 PALERMO 115 31516 WYANDJT2 115 2	P2-4:A3:11_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NConv	111.38	112.36						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-16	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P2-4:A3:11_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NConv	101.15	105.97						Caribou Thermal SPS
NYVL-T-17	31488 GRIZ JCT 115 31512 BIG BEND 115 1	P2-4:A3:11_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NConv	104.83	105.71						Caribou Thermal SPS
NYVL-T-18	31516 WYANDJT2 115 31512 BIG BEND 115 2	P2-4:A3:11_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NConv	111.67	112.61						Caribou Thermal SPS
NYVL-T-19	31570 BENTON 60.0 31572 GIRVAN 60.0 1	P2-2:A3:53_BUS FAULT AT 31604 COTTONWD 60.00	P2	Bus-tie breaker	<100.0	100.19	100.04						Explore potential mitigation
NYVL-T-20	31574 ANDERSON 60.0 31604 COTTONWD 60.0 1	P2-2:A3:35_BUS FAULT AT 31468 CASCADE 115.00	P2	Bus-tie breaker	<100.0	101.67	100.55						Explore potential mitigation
NYVL-T-21	31677 GRS F JT 60.0 31689 ELIZ TWN 60.0 1	P2-2:A3:25_Table Mountain 230 kV Bus Section 1D	P2	Bus-tie breaker	NConv	<100.0	<100.0						Explore potential mitigation

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					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-T-22	31688 SPI 60.0 38056 PLMS-SRA 60.0 1	P2-2:A3:25_Table Mountain 230 kV Bus Section 1D	P2	Bus-tie breaker	NConv	<100.0	<100.0						Explore potential mitigation
NYVL-T-23	31690 CARIBOU 60.0 31677 GRS F JT 60.0 1	P2-2:A3:25_Table Mountain 230 kV Bus Section 1D	P2	Bus-tie breaker	NConv	<100.0	<100.0						Explore potential mitigation
NYVL-T-24	31733 CAPYSWCH 60.0 31731 CAPAYJCT 60.0 3	P2-3:A3:10:_NON-BUS-TIE BREAKER CB-NEW FAILURE AT GLENN 230 kV	P2	Non Bus-tie breaker	110.38	114.11	114.04						Long Term: Anita Substation Project
NYVL-T-25	31826 SOUTH G 4.16 31596 SOUTH 60.0 1	P2-2:A3:52_BUS FAULT AT 31602 COLEMAN 60.00	P2	Bus-tie breaker	<100.0	101.46	101.46						Explore potential mitigation
NYVL-T-26	31482 PALERMO 115 31516 WYANDJT2 115 2	P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P2-1	Line section w/o fault	NConv	104.07	105.12						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-27	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P2-1:A3:34:_CARIBOU-BELDENTP #1 230 kV	P2-1	Line section w/o fault	<100.0	108.80	<100.0						Caribou Thermal SPS
NYVL-T-28	31488 GRIZ JCT 115 31512 BIG BEND 115 1	P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P2-1	Line section w/o fault	NConv	<100.0	<100.0						Caribou Thermal SPS
NYVL-T-29	31664 WESTWOOD 60.0 31668 ULTR WSD 60.0 1	P2-1:A26:205:_MEADOWVW-WESTWOOD #1 60 kV	P2-1	Line section w/o fault	<100.0	104.73	<100.0						Explore potential mitigation
NYVL-T-30	31690 CARIBOU 60.0 31677 GRS F JT 60.0 1	P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P2-1	Line section w/o fault	NConv	<100.0	<100.0						Explore potential mitigation
NYVL-T-31	30110 GLENN 230 31722 GLENN 60.0 2	P1-1:A3:66:_BLCKBUTT 9.11 Generator ID 1 and P1-3:A3:66:_Glenn 230/60 kV Transformer No. 1	P3	G-1/N-1	<100.0	109.21	<100.0						Glenn 230/60 kV Transformer No. 1 Replacement Project
NYVL-T-32	30110 GLENN 230 31722 GLENN 60.0 2	P1-1:A3:68:_CSC HYDR 9.11 Generator ID 2 and P1-3:A3:66:_Glenn 230/60 kV Transformer No. 1	P3	G-1/N-1	102.16	<100.0	<100.0						Glenn 230/60 kV Transformer No. 1 Replacement Project
NYVL-T-33	31472 WODLF TP 115 31794 WOODLEAF 13.8 1	P1-1:A3:107:_COLUSGT1 18.00 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-34	31474 FRBSTNTP 115 31814 FORBSTWN 11.5 1	P1-1:A3:32:_POE 2 13.80 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-35	31482 PALERMO 115 31516 WYANDJT2 115 2	P1-1:A3:44:_CRBOU2-3 11.50 Generator ID 2 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	106.18	<100.0	<100.0						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-36	31482 PALERMO 115 31516 WYANDJT2 115 2	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	NConv						Long Term: South of Palermo 115 kV Reinforcement



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					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-T-37	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P1-1:A3:94:_SPI-QUCY 13.80 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	<100.0	NConv						Caribou Thermal SPS
NYVL-T-38	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P1-1:A3:97:_GRIZZLYG 6.90 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	107.96	NConv	<100.0						Caribou Thermal SPS
NYVL-T-39	31488 GRIZ JCT 115 31512 BIG BEND 115 1	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	NConv						Caribou Thermal SPS
NYVL-T-40	31488 GRIZ JCT 115 31512 BIG BEND 115 1	P1-1:A3:97:_GRIZZLYG 6.90 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	107.69	NConv	<100.0						Caribou Thermal SPS
NYVL-T-41	31516 WYANDJT2 115 31512 BIG BEND 115 2	P1-1:A3:44:_CRBOU2-3 11.50 Generator ID 2 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	106.40	NConv	<100.0						Caribou Thermal SPS
NYVL-T-42	31516 WYANDJT2 115 31512 BIG BEND 115 2	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	NConv						Caribou Thermal SPS
NYVL-T-43	31574 ANDERSON 60.0 31604 COTTONWD 60.0 1	P1-1:A3:54:_VOLTA1-2 9.11 Generator ID 1 and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P3	G-1/N-1	<100.0	107.12	105.98						Explore potential mitigation
NYVL-T-44	31677 GRS F JT 60.0 31689 ELIZ TWN 60.0 1	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-45	31688 SPI 60.0 38056 PLMS-SRA 60.0 1	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-46	31690 CARIBOU 60.0 31677 GRS F JT 60.0 1	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-47	31834 KELLYRDG 4.16 31646 KLLY RDE 60.0 1	P1-1:A3:107:_COLUSGT1 18.00 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-48	31838 CNTRVL12 9.11 31696 CNTRVLE 60.0 1	P1-1:A3:45:_CRBU 1 11.50 Generator ID 1 and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P3	G-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-49	31840 BLCKBUTT 9.11 31723 ORLND JT 60.0 1	P1-1:A3:107:_COLUSGT1 18.00 Generator ID 1 and P1-3:A3:66:_Glenn 230/60 kV Transformer No. 1	P3	G-1/N-1	<100.0	<100.0	106.29						Explore potential mitigation
NYVL-T-50	36900 RICHMOND 60.0 31664 WESTWOOD 60.0 1	P1-1:A3:25:_BUTTVLLY 13.80 Generator ID 1 and P2-1:A26:205:_MEADOWVW-WESTWOOD #1 60 kV	P3	G-1/N-1	<100.0	126.14	<100.0						Explore potential mitigation

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					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-T-51	30280 POE 230 30330 RIO OSO 230 1	P1-2:A3:37:_Caribou-Table Mountain 230 kV Line and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	NConv						Explore potential mitigation
NYVL-T-52	31472 WODLF TP 115 31794 WOODLEAF 13.8 1	P1-3:A3:26:_Poe 2 No.2 230/13.8 kV Transformer and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-53	31472 WODLF TP 115 31794 WOODLEAF 13.8 1	P1-3:A3:31:_Palermo No.2 230/115 kV Transformer and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	100.20	<100.0	<100.0						Explore potential mitigation
NYVL-T-54	31474 FRBSTNTP 115 31814 FORBSTWN 11.5 1	P1-2:A27:110:_Oroville-Thermalito-Table Mountain No.3 230 kV Line and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-55	31474 FRBSTNTP 115 31814 FORBSTWN 11.5 1	P1-3:A3:31:_Palermo No.2 230/115 kV Transformer and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	103.76	<100.0	<100.0						Explore potential mitigation
NYVL-T-56	31480 WYANDTTE 115 31516 WYANDJT2 115 1	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<100.0	139.34	158.43						Caribou Thermal SPS
NYVL-T-57	31482 PALERMO 115 31516 WYANDJT2 115 2	P1-2:A3:37:_Caribou-Table Mountain 230 kV Line and P1-2:A3:58:_Palermo-Wyandotte 115 kV Line	P6	N-1/N-1	113.41	169.65	141.78						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-58	31482 PALERMO 115 31516 WYANDJT2 115 2	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P1-2:A3:37:_Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	112.66	164.68	140.86						Long Term: South of Palermo 115 kV Reinforcement
NYVL-T-59	31516 WYANDJT2 115 31512 BIG BEND 115 2	P1-3:A3:50:_Caribou No.8 60/11.5 Transformer and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	NConv						Caribou Thermal SPS
NYVL-T-60	31566 KESWICK 60.0 31582 STLLWATR 60.0 1	P2-1:A3:47:_FRSTGLEN-LOW GAP1 #1 115 kV and P1-2:A3:52:_Trinity-Cottonwood 115 kV Line	P6	N-1/N-1	<100.0	100.13	100.15						Explore potential mitigation
NYVL-T-61	31572 GIRVAN 60.0 31574 ANDERSON 60.0 1	P1-2:A3:74:_Cottonwood-Benton No.2 60 kV Line and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P6	N-1/N-1	102.47	104.28	102.21						Explore potential mitigation
NYVL-T-62	31574 ANDERSON 60.0 31604 COTTONWD 60.0 1	P1-2:A3:10:_New Q643G SPI Anderson 2 Gen Tap 60 kV Line (tap from Cascade-Cottonwd 115kV) and P1-2:A3:55B:_Cascade-Craig View 115 kV Line (Path 25)	P6	N-1/N-1	<100.0	101.39	100.28						Explore potential mitigation
NYVL-T-63	31574 ANDERSON 60.0 31604 COTTONWD 60.0 1	P1-2:A3:74:_Cottonwood-Benton No.2 60 kV Line and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P6	N-1/N-1	141.81	150.14	148.07						Explore potential mitigation

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					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-T-64	31602 COLEMAN 60.0 31606 CLMN JCT 60.0 1	P1-3:A3:65:_New NewBus 230/60 kV Transformer and P1-2:A3:84:_Cottonwood-Red Bluff 60 kV Line	P6	N-1/N-1	104.11	108.00	<100.0						Explore potential mitigation
NYVL-T-65	31604 COTTONWD 60.0 31607 RED B JT 60.0 1	P1-2:A3:3:_NewBus 60.00 to RED BLFF 60.00 and P2-1:A3:121:_COLEMAN-CLMN JCT #1 60 kV	P6	N-1/N-1	<100.0	108.93	108.90						Explore potential mitigation
NYVL-T-66	31607 RED B JT 60.0 31608 RED BLFF 60.0 1	P1-2:A3:3:_NewBus 60.00 to RED BLFF 60.00 and P2-1:A3:121:_COLEMAN-CLMN JCT #1 60 kV	P6	N-1/N-1	<100.0	108.89	108.89						Explore potential mitigation
NYVL-T-67	31607 RED B JT 60.0 31608 RED BLFF 60.0 1	P1-3:A3:65:_New NewBus 230/60 kV Transformer and P1-2:A3:83:_Coleman-Red Bluff 60 kV Line	P6	N-1/N-1	100.61	108.32	<100.0						Explore potential mitigation
NYVL-T-68	31674 BIG MDWS 60.0 31690 CARIBOU 60.0 1	P2-1:A26:204:_RICHMOND-WESTWOOD #1 60 kV and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-69	31786 ROCK CK1 13.8 30268 ROCKCK 1 230 1	P1-2:A3:37:_Caribou-Table Mountain 230 kV Line and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	NConv						Explore potential mitigation
NYVL-T-70	31818 PIT 1 U1 11.0 30185 PIT 1 230 1	P1-2:A3:70:_Pit No.1-McArthur 60 kV Line and P1-3:A3:8:_Pit 1 PH No.2 230/11 kV Transformer	P6	N-1/N-1	109.45	99.71	99.83						Explore potential mitigation
NYVL-T-71	31826 SOUTH G 4.16 31596 SOUTH 60.0 1	P1-2:A3:80:_Volta-Deschutes 60 kV Line and P1-2:A3:82:_Coleman-Cottonwood 60 kV Line	P6	N-1/N-1	<100.0	105.65	107.27						Explore potential mitigation
NYVL-T-72	31840 BLCKBUTT 9.11 31723 ORLND JT 60.0 1	P1-2:A3:103:_Glenn No.1 60 kV Line and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-73	31908 INSKIP 4.16 31600 INSKIP 60.0 1	P1-2:A3:80:_Volta-Deschutes 60 kV Line and P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P6	N-1/N-1	<100.0	NConv	<100.0						Explore potential mitigation
NYVL-T-74	31486 CARIBOU 115 31488 GRIZ JCT 115 1	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<100.0	108.74	<100.0						Caribou Thermal SPS
NYVL-T-75	31501 CHICOTP1 115 31504 TBLE MTN 115 1	P7-1:A3:4_Sycamore Creek-Notre Dame-Table Mountain and Table Mountain-Butte No.2 115 kV Lines	P7	DCTL	<100.0	102.23	102.05						Explore potential mitigation
NYVL-T-76	31516 WYANDJT2 115 31512 BIG BEND 115 2	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<100.0	100.22	<100.0						Caribou Thermal SPS
NYVL-T-77	31640 TRES VIS 60.0 31644 BIGGSJCT 60.0 1	P7-1:A3:15_Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	NConv	NConv	<100.0						Explore potential mitigation

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NYVL-T-78	31642 PEACHTON 60.0 31644 BIGGSJCT 60.0 1	P7-1:A3:15_Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	NConv	NConv	<100.0						Explore potential mitigation
NYVL-T-79	31664 WESTWOOD 60.0 31668 ULTR WSD 60.0 1	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<100.0	111.41	<100.0						Explore potential mitigation
NYVL-T-80	31718 TBLE MTN 60.0 30301 TBL MT2M 230 2	P7-1:A3:15_Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	NConv	NConv	<100.0						Explore potential mitigation
NYVL-T-81	31826 SOUTH G 4.16 31596 SOUTH 60.0 1	P7-1:A3:2_Cottonwood No.1 and No.2 60 kV Lines	P7	DCTL	<100.0	102.11	102.27						Explore potential mitigation

Study Area: **PG&E North Valley**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-VD-1	ANTLER 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.351	5.236						Explore potential mitigation
NYVL-VD-2	BIG BEND 115 kV	P1-3:A3:19:_Caribou No.11 230/115/60 kV Transformer	P1	N-1	7.81	<5.0	<5.0						Explore potential mitigation
NYVL-VD-3	CASCADE 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.197	5.086						Explore potential mitigation
NYVL-VD-4	CHESTER 60 kV	P1-1:A3:93:_COLLINS 13.00 Generator ID 1	P1	N-1	<5.0	<5.0	5.037						Explore potential mitigation
NYVL-VD-5	ELKCREEK 60 kV	P1-1:A3:68:_CSC HYDR 9.11 Generator ID 2	P1	N-1	<5.0	5.871	5.876						Explore potential mitigation
NYVL-VD-6	MTN GATE 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.32	5.206						Explore potential mitigation
NYVL-VD-7	OREGNTRL 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.076	<5.0						Explore potential mitigation
NYVL-VD-8	PPL 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.351	5.236						Explore potential mitigation
NYVL-VD-9	RED B JT 60 kV	P1-3:A3:65:_New NewBus 230/60 kV Transformer	P1	N-1	5.561	5.676	<5.0						Explore potential mitigation
NYVL-VD-10	STLLWATR 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P1	N-1	<5.0	5.062	<5.0						Explore potential mitigation
NYVL-VD-11	ANDERSON 60 kV	P2-2:A3:53_BUS FAULT AT 31604 COTTONWD 60.00	P2	Bus	6.791	7.938	7.897						Explore potential mitigation
NYVL-VD-12	BIG BEND 115 kV	P2-4:A3:12_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NCon	6.331	5.741						Explore potential mitigation
NYVL-VD-13	CHESTER 60 kV	P2-2:A3:25_Table Mountain 230 kV Bus Section 1D	P2	Bus-tie breaker	NCon	<5.0	<5.0						Explore potential mitigation
NYVL-VD-14	CHICO B 115 kV	P2-2:A3:42A_BUS FAULT AT 31504 TBLE MTN Bus 1 115.00	P2	Bus-tie breaker	5.534	5.841	5.828						Explore potential mitigation
NYVL-VD-15	CHICOTP1 115 kV	P2-2:A3:42A_BUS FAULT AT 31504 TBLE MTN Bus 1 115.00	P2	Bus-tie breaker	5.518	5.823	5.809						Explore potential mitigation
NYVL-VD-16	ELIZ TWN 60 kV	P2-2:A3:60_BUS FAULT AT 31690 CARIBOU 60.00	P2	Bus	7.553	8.631	<5.0						Explore potential mitigation
NYVL-VD-17	EST QNCY 60 kV	P2-2:A3:60_BUS FAULT AT 31690 CARIBOU 60.00	P2	Bus	6.995	8.14	<5.0						Explore potential mitigation
NYVL-VD-18	GRS F JT 60 kV	P2-2:A3:60_BUS FAULT AT 31690 CARIBOU 60.00	P2	Bus	9.226	10.119	<5.0						Explore potential mitigation
NYVL-VD-19	KESWICK 60 kV	P2-2:A3:46_BUS FAULT AT 31580 CASCADE 60.00	P2	Bus	5.986	7.047	7.151						Explore potential mitigation
NYVL-VD-20	PLMS JCT 60 kV	P2-2:A3:60_BUS FAULT AT 31690 CARIBOU 60.00	P2	Bus	6.995	8.14	<5.0						Explore potential mitigation
NYVL-VD-21	SPI 60 kV	P2-2:A3:60_BUS FAULT AT 31690 CARIBOU 60.00	P2	Bus	6.991	8.142	<5.0						Explore potential mitigation
NYVL-VD-22	STLLWATR 60 kV	P2-2:A3:46_BUS FAULT AT 31580 CASCADE 60.00	P2	Bus	7.055	8.268	8.389						Explore potential mitigation
NYVL-VD-23	TBLM JCT 115 kV	P2-2:A3:42B_BUS FAULT AT 31504 TBLE MTN Bus 2 115.00	P2	Bus	<5.0	<5.0	5.38						Explore potential mitigation
NYVL-VD-24	ULTR WSD 60 kV	P2-4:A3:12_TABLE MOUNTAIN CB 203 BUS PARALLEL STUCK	P2	Bus-tie breaker	NCon	<5.0	<5.0						Explore potential mitigation

Study Area: **PG&E North Valley**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-VD-25	WESTWOOD 60 kV	P2-2:A3:25_Table Mountain 230 kV Bus Section 1D	P2	Bus-tie breaker	NCon	<5.0	<5.0						Explore potential mitigation
NYVL-VD-26	STLLWATR 60 kV	P1-1:A3:54:_VOLTA1-2 9.11 Generator ID 1 and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P3	G-1/N-1	<5.0	5.284	5.177						Explore potential mitigation
NYVL-VD-27	TYLER 60 kV	P1-1:A3:100:_COLEMAN 6.60 Generator ID 1 and P1-3:A3:65:_New NewBus 230/60 kV Transformer	P3	G-1/N-1	<5.0	5.828	<5.0						Explore potential mitigation
NYVL-VD-28	TYLER 60 kV	P1-1:A3:15:_NEO REDB 13.80 Generator ID 1 and P1-3:A3:65:_New NewBus 230/60 kV Transformer	P3	G-1/N-1	<5.0	<5.0	5.607						Explore potential mitigation
NYVL-VD-29	CHESTER 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	38.699	10.231						Explore potential mitigation
NYVL-VD-30	ELIZ JT1 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	24.737	11.571						Explore potential mitigation
NYVL-VD-31	EST QNCY 60 kV	P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:37:_Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	53.983	<10.0						Explore potential mitigation
NYVL-VD-32	GANSNER 60 kV	P2-1:A3:170:_EST Q1-SPI #1 60 kV and P1-2:A3:37:_Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	50.028	<10.0						Explore potential mitigation
NYVL-VD-33	GANSNER 60 kV	P2-1:A3:70:_WYANDTTE-WYANDJT1 #1 115 kV and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	24.861	11.616						Explore potential mitigation
NYVL-VD-34	GRIZ JCT 115 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	26.659	17.964						Explore potential mitigation
NYVL-VD-35	GRS F JT 60 kV	P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:37:_Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	54.362	<10.0						Explore potential mitigation
NYVL-VD-36	GRYS FLT 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	24.625	11.529						Explore potential mitigation
NYVL-VD-37	HMLTN BR 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	37.688	10.258						Explore potential mitigation
NYVL-VD-38	HOWELLS 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	24.624	11.529						Explore potential mitigation
NYVL-VD-39	MTN GATE 60 kV	P1-2:A3:7:_ (New) Cascade - Benton 60 kV Line and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P6	N-1/N-1	<10.0	10.273	10.197						Explore potential mitigation
NYVL-VD-40	SPANSHCK 60 kV	P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:37:_Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	56.946	<10.0						Explore potential mitigation

Study Area: **PG&E North Valley**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-VD-41	SPI 60 kV	P2-1:A3:174: _SPI-PLMS-SRA #1 60 kV and P2-1:A3:34: _CARIBOU-BELDENTP #1 230 kV	P6	N-1/N-1	<10.0	48.723	<10.0						Explore potential mitigation
NYVL-VD-42	ULTR WSD 60 kV	P1-2:A3:43: _Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:37: _Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	60.988	<10.0						Explore potential mitigation
NYVL-VD-43	WESTWOOD 60 kV	P1-2:A3:43: _Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:37: _Caribou-Table Mountain 230 kV Line	P6	N-1/N-1	<10.0	61.223	<10.0						Explore potential mitigation
NYVL-VD-44	WYANDTTE 115 kV	P1-2:A3:58: _Palermo-Wyandotte 115 kV Line and P2-1:A3:73: _PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	<10.0	78.943	75.86						Explore potential mitigation
NYVL-VD-45	BIG BEND 115 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	30.056	<10.0						Explore potential mitigation
NYVL-VD-46	BIG MDWS 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	50.176	<10.0						Explore potential mitigation
NYVL-VD-47	BIGGSJCT 60 kV	P7-1:A3:15 _Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	54.06	NCon	<10.0						Explore potential mitigation
NYVL-VD-48	CARIBOU 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	45.338	<10.0						Explore potential mitigation
NYVL-VD-49	CARIBOU 115 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	44.546	<10.0						Explore potential mitigation
NYVL-VD-50	CHESTER 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	55.257	<10.0						Explore potential mitigation
NYVL-VD-51	ELIZ JT1 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	46.825	<10.0						Explore potential mitigation
NYVL-VD-52	ELIZ JT2 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	46.855	<10.0						Explore potential mitigation
NYVL-VD-53	EST QNCY 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	39.557	<10.0						Explore potential mitigation
NYVL-VD-54	GANSNER 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	47.159	<10.0						Explore potential mitigation
NYVL-VD-55	GRIZ JCT 115 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	40.04	<10.0						Explore potential mitigation
NYVL-VD-56	HMLTN BR 60 kV	P7-1:A3:6 _Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	53.796	<10.0						Explore potential mitigation

Study Area: **PG&E North Valley**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A	N/A	
NYVL-VD-57	HOWELLS 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	46.515	<10.0						Explore potential mitigation
NYVL-VD-58	PEACHTON 60 kV	P7-1:A3:15_Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	61.712	NCon	<10.0						Explore potential mitigation
NYVL-VD-59	PLMS JCT 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	39.555	<10.0						Explore potential mitigation
NYVL-VD-60	SPANSHCK 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	46.852	<10.0						Explore potential mitigation
NYVL-VD-61	SPI 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	39.502	<10.0						Explore potential mitigation
NYVL-VD-62	TRES VIS 60 kV	P7-1:A3:15_Palermo-Pease 115 kV Line and Pease-Rio Oso 115 kV Line	P7	DCTL	39.887	NCon	<10.0						Explore potential mitigation
NYVL-VD-63	ULTR WSD 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	55.99	<10.0						Explore potential mitigation
NYVL-VD-64	WESTWOOD 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	<10.0	56.373	<10.0						Explore potential mitigation

Study Area: **PG&E North Valley**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-V-1	CHESTER 60 kV	P1-1:A3:1:_Q720 4.16 Generator ID 1 and P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P3	G-1/N-1	>0.90	0.8878	>0.90						Explore potential mitigation
NYVL-V-2	HMLTN BR 60 kV	P1-1:A3:60:_HAMIL.BR 2.40 Generator ID 2 and P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P3	G-1/N-1	>0.90	0.8936	>0.90						Explore potential mitigation
NYVL-V-3	ULTR WSD 60 kV	P1-1:A3:1:_Q720 4.16 Generator ID 1 and P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P3	G-1/N-1	>0.90	0.8798	>0.90						Explore potential mitigation
NYVL-V-4	WESTWOOD 60 kV	P1-1:A3:1:_Q720 4.16 Generator ID 1 and P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P3	G-1/N-1	>0.90	0.8759	>0.90						Explore potential mitigation
NYVL-V-5	ANDERSON 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer and P2-1:A3:101:_ANDERSON-COTTONWD #1 60 kV	P6	N-1/N-1	>0.90	0.8752	0.8748						Explore potential mitigation
NYVL-V-6	ANTLER 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer and P1-2:A3:7:_ (New) Cascade - Benton 60 kV Line	P6	N-1/N-1	>0.90	0.8834	0.8862						Explore potential mitigation
NYVL-V-7	APT ORVC 60 kV	P1-2:A3:37:_Caribou-Table Mountain 230 kV Line and P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line	P6	N-1/N-1	>0.90	0.8747	>0.90						Explore potential mitigation
NYVL-V-8	BIG BEND 115 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.5929	0.6698						Explore potential mitigation
NYVL-V-9	DIRYVLE 60 kV	P1-3:A3:65:_New NewBus 230/60 kV Transformer and P2-1:A3:121:_COLEMAN-CLMN JCT #1 60 kV	P6	N-1/N-1	>0.90	0.8922	>0.90						Explore potential mitigation
NYVL-V-10	ELIZ JT2 60 kV	P2-1:A3:70:_WYANDTTE-WYANDJT1 #1 115 kV and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.7384	0.8993						Explore potential mitigation
NYVL-V-11	EST Q JT 60 kV	P2-1:A3:90:_WYANDJT2-BIG BEND #2 115 kV and P2-1:A3:36:_BELDENTP-TBL MT D #1 230 kV	P6	N-1/N-1	>0.90	0.8943	0.9308						Explore potential mitigation
NYVL-V-12	GANSNER 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.7339	0.8955						Explore potential mitigation
NYVL-V-13	GIRVAN 60 kV	P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer and P2-1:A3:101:_ANDERSON-COTTONWD #1 60 kV	P6	N-1/N-1	>0.90	0.8986	0.898						Explore potential mitigation
NYVL-V-14	GRIZZLY1 115 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.7615	0.855						Explore potential mitigation
NYVL-V-15	KLLY RDE 60 kV	P2-1:A3:34:_CARIBOU-BELDENTP #1 230 kV and P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line	P6	N-1/N-1	>0.90	0.8755	>0.90						Explore potential mitigation

Study Area: **PG&E North Valley**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-V-16	LOMS JCT 60 kV	P2-1:A3:102:_WNTU PMS-BENTON #1 60 kV and P2-1:A3:104:_CASCADE-OREGNTRL #1 60 kV	P6	N-1/N-1	>0.90	0.8852	>0.90						Explore potential mitigation
NYVL-V-17	LS ML JT 60 kV	P2-1:A3:121:_COLEMAN-CLMN JCT #1 60 kV and P1-2:A3:3:_NewBus 60.00 to RED BLFF 60.00	P6	N-1/N-1	>0.90	0.8923	0.8931						Explore potential mitigation
NYVL-V-18	PALRMO M 230 kV	P1-2:A3:43:_Table Mountain(D)-Palermo 230 kV Line and P1-2:A3:48:_Palermo-Colgate 230 kV Line	P6	N-1/N-1	0.889	0.8822	>0.90						Explore potential mitigation
NYVL-V-19	PPL 60 kV	P1-2:A3:7:_ (New) Cascade - Benton 60 kV Line and P1-3:A3:34B:_Cascade No.1 115/60/13.8 kV Transformer	P6	N-1/N-1	>0.90	0.8864	0.8871						Explore potential mitigation
NYVL-V-20	SPANSHCK 60 kV	P1-2:A3:58:_Palermo-Wyandotte 115 kV Line and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.7383	0.8992						Explore potential mitigation
NYVL-V-21	TYLER 60 kV	P1-2:A3:3:_NewBus 60.00 to RED BLFF 60.00 and P1-3:A3:65:_New NewBus 230/60 kV Transformer	P6	N-1/N-1	>0.90	0.8959	>0.90						Explore potential mitigation
NYVL-V-22	WYANDTTE 115 kV	P2-1:A3:70:_WYANDTTE-WYANDJT1 #1 115 kV and P2-1:A3:73:_PALERMO-WYANDJT2 #2 115 kV	P6	N-1/N-1	>0.90	0.2334	0.2637						Explore potential mitigation
NYVL-V-23	BIG MDWS 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.4555	>0.90						Explore potential mitigation
NYVL-V-24	CARIBOU 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5448	>0.90						Explore potential mitigation
NYVL-V-25	CARIBOU 115 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5768	>0.90						Explore potential mitigation
NYVL-V-26	CARIBOU 230 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5871	>0.90						Explore potential mitigation
NYVL-V-27	CHESTER 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.3608	>0.90						Explore potential mitigation
NYVL-V-28	ELIZ JT1 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5194	>0.90						Explore potential mitigation
NYVL-V-29	ELIZ JT2 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5189	>0.90						Explore potential mitigation
NYVL-V-30	EST QNCY 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5689	>0.90						Explore potential mitigation
NYVL-V-31	GANSNER 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5125	>0.90						Explore potential mitigation

Study Area: **PG&E North Valley**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2020 SP Heavy Renewable & Min Gas Gen	2025 Retirement of QF Generations	2025 SP No AAEE	N/A	N/A	N/A	N/A		N/A
NYVL-V-32	GRIZ JCT 115 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.6235	>0.90						Explore potential mitigation
NYVL-V-33	HMLTN BR 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.3884	>0.90						Explore potential mitigation
NYVL-V-34	HOWELLS 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5254	>0.90						Explore potential mitigation
NYVL-V-35	PLMS JCT 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.569	>0.90						Explore potential mitigation
NYVL-V-36	SPANSHCK 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5189	>0.90						Explore potential mitigation
NYVL-V-37	SPI 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.5696	>0.90						Explore potential mitigation
NYVL-V-38	ULTR WSD 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.3461	>0.90						Explore potential mitigation
NYVL-V-39	WESTWOOD 60 kV	P7-1:A3:6_Table Mountain-Paradise 115 kV Line and Caribou-Table Mountain 230 kV Line	P7	DCTL	>0.90	0.3386	>0.90						Explore potential mitigation